

Serial No. 10/729,889
Wakefield, et al.
Filed December 5, 2003

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Response to Office Action
Examiner: Robert M. Timblin
Group Art Unit: 2167

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

INVENTORS: Todd D. Wakefield and David L. Bean
TITLE: Methods and Products for Integrating Mixed format Data Including
The Extraction of Relational Facts from Free Text
FILING DATE: December 5, 2003 EXAMINER NAME: Robert M. Timblin
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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Amendment and Claims Listing

Please amend the claims as follows:

Claim 1 (currently amended) 1. A computer program product located to one or more storage media devices usable to perform integration of mixed format data, said computer program product comprising instructions executable by a computer to perform the functions of:

accessing a database feed of data records, said data records including both of structured data and unstructured data; the structured data comprising a set of data tuples;

accessing a source of unstructured data, the unstructured data of a particular data record including free text relatable related to the data tuples of the structured data of that data record;

extracting relational facts from the free text, said extracting step being performed using linguistic information from the free text;

producing a set of construed data from said unstructured data, each construed datum containing at least one relational fact extracted from free text,

each construed datum being further relatable to a data tuple of the structured data of the data record

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in which said free text was found; and

integrating the ~~produced~~ construed data with the data tuples of the particular structured data to which the construed data relates.

Claim 2 (cancelled)

Claim 3 (cancelled)

Claim 4 (currently amended) 4. A computer program product according to claim 1, ~~wherein said instructions are further executable to perform the function~~ further comprising the step of applying caseframes while performing said ~~extracting step~~ interpreting the free text.

Claim 5 (original) 5. A computer program product according to claim 1, wherein said instructions are further executable to perform the function of producing a new database containing the integrated data produced by said integrating.

Claim 6 (currently amended) 6. A computer program product according to claim 1, wherein said data feed is a database, and wherein said instructions are further executable to perform the function of inserting the ~~construed produced~~ data into the said database of structured data while performing said integrating ~~step~~ the produced data.

Claim 6 (currently amended) 7. A computer program product according to claim 1, wherein said instructions are further executable to perform the function of creating a new database containing the construed data while performing said integrating the produced data.

Claim 8 (currently amended) 8. A computer program product according to claim 7, wherein said new database is a relational database which relates said relational facts to said structured data. ~~the instructions are further executable to produce a new relational database containing the integrated data produced by~~

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said integrating.

Claim 9 (original) 9. A computer program product according to claim 8, wherein the instructions are further executable to produce a file containing the integrated data produced by said integrating.

Claim 10. (original) 10. A computer program product according to claim 9, wherein the instructions are further executable to produce a file having a format selected from the group of XML, character separated values, spreadsheet formats and file-based database structures.

Claim 11. (original) 11. A computer system including a computer program product according to claim 1, further comprising: a processing unit coupled to said one or more storage media devices, said processing unit being capable of executing said instructions; and an execution command unit, whereby operation of said instructions and said processing unit may be commanded or controlled.

Claim 12. (original) 12. A computer program product according to claim 1, wherein said instructions are further executable to combine like attributes for the extracted relational fact types produced in performing said extracting relational facts from the free text.

Claim 13. (original) 13. A computer program product according to claim 1, wherein said instructions are further executable to combine like relational fact types for the extracted relational facts produced in performing said extracting relational facts from the free text.

Claim 14. (original) 14. A computer program product according to claim 1, wherein said instructions provide relationships with domain roles applied in performing said extracting relational facts from the free text.

Claim 15. (original) 15. A computer program product according to claim 1, wherein said instructions

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store the relational facts produced in performing said extracting relational facts from the free text.

Claim 16. (original) 16. A computer program product according to claim 1, wherein the extracted relational facts produced in performing said extracting relational facts and the integrated data produced by the performance of said integrating the produced data includes reference information to the original free text.

Claim 17. (currently amended) 17, A computer program product located to one or more storage media devices usable to perform integration of mixed format data, said computer program product comprising instructions executable by a computer to perform the functions of:

accessing a database containing data records, at least some of the data records containing both structured and unstructured data, the unstructured data including free text, of structured data, the structured data comprising a set of data tuples;

~~accessing a source of unstructured data, the unstructured data including free text relatable to the data tuples of the structured data;~~

using linguistic information to extract ~~extracting~~ relational facts from the free text;

producing a set of construed data reflecting at least one relational fact conveyed in said free text, each construed datum containing at least one relational fact, each construed datum being further relatable to a data tuple of the structured data in the data record from which said free text was read;

integrating ~~the produced~~ said construed data with the data tuples of the structured data of the data record to which said construed data relates, said integrating step retaining reference information to the original free text; and

constructing a library containing extracted attributes.

Claim 18. (currently amended) 18. A method for integrating mixed format data, comprising the steps of:

accessing a database containing data records, at least some of the data records containing both of structured data and unstructured data, the unstructured data including free text, the structured data

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~~comprising a set of data tuples;~~

~~—accessing a source of unstructured data, the unstructured data including free text relating to the data tuples of the structured data; extracting relational facts from the free text;~~

producing a set of construed data reflecting at least one relational fact conveyed in free text,
each construed datum containing at least one relational fact, each construed datum being further
relatable to a data tuple of the structured data; and

integrating the produced data with the data tuples of the structured data.

Claim 19 (cancelled)

Claim 20 (cancelled)

Claim 21 (currently amended) 21. A method according to claim 18, ~~wherein said performing said interpreting the free text applies~~ further comprising the step of applying caseframes to said free text.

Claim 22 (currently amended) 22. A method according to claim 18, further comprising the step of producing a new database containing the integrated data produced by said integrating step.

Claim 23 (currently amended) 23. A method according to claim 18, further comprising the step of inserting the produced data into said ~~the database of structured data.~~

Claim 24 (original) 24. A method according to claim 18, further comprising the step of creating a new database.

Claim 25 (original) 25. A method according to claim 24, wherein the new database is a relational database.

Claim 26 (currently amended) 26. A method according to claim 24, wherein new database includes at

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least one file containing the integrated data produced by said integrating step.

Claim 27 (original) 27. A method according to claim 26, wherein the new database has a format selected from the group of XML, character separated values, spreadsheet formats and file-based database structures.

Claim 28 (original) 28. A method according to claim 18, further comprising the step of combining like attributes for the extracted relational facts produced in performing said extracting relational facts from the free text.

Claim 29 (original) 29. A method according to claim 18, further comprising the step of combining like relation types for the extracted relational facts produced in performing said extracting relational facts from the free text.

Claim 30 (original) 30. A method according to claim 18, wherein domain roles are applied in said step of extracting relational facts from the free text.

Claim 32 (original) 31. A method according to claim 18, further comprising the step of storing the relational facts produced in performing said extracting relational facts from the free text.

Claim 32 (original) 32. A method according to claim 18, wherein the extracted relational facts produced in performing said extracting relational facts and the integrated data produced by the performance of said integrating the produced data includes reference information to the original free text.

Claim 33. (newly added) 33. A computer program product according to claim 1, wherein said instructions are further executable to replace like or related attributes for relational facts with a common canonical representation based on those like or related attributes.

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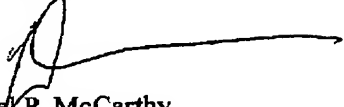
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Claim 34. (newly added) 34. A computer program product according to claim 1, wherein said instructions are further executable to replace like or related relational fact types with a common canonical representation.

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